THE GASTRIC FUNDUS

ITS PRESENTATION AS A 'MASS' BELOW THE LEFT DOME OF THE DIAPHRAGM

The empty fundus of the stomach may sometimes produce a rounded shadow which is seen to lie below the left dome of the diaphragm in the plain radiograph of the abdomen.

Although this feature is probably well known, I am prompted to draw attention to it, having encountered instances in which the shadow has been misinterpreted and considered to be a cyst or tumour. Three illustrative cases are presented, as examples:

Case 1

(W.v.B.). Male, aged 40 years. A pyelogram taken during the investigation of his hypertension (Fig. 1) showed a 'mass' above the left kidney. The question of cyst or tumour was raised. However, barium in the gastric fundus confirmed the true nature of the shadow (Fig. 2).

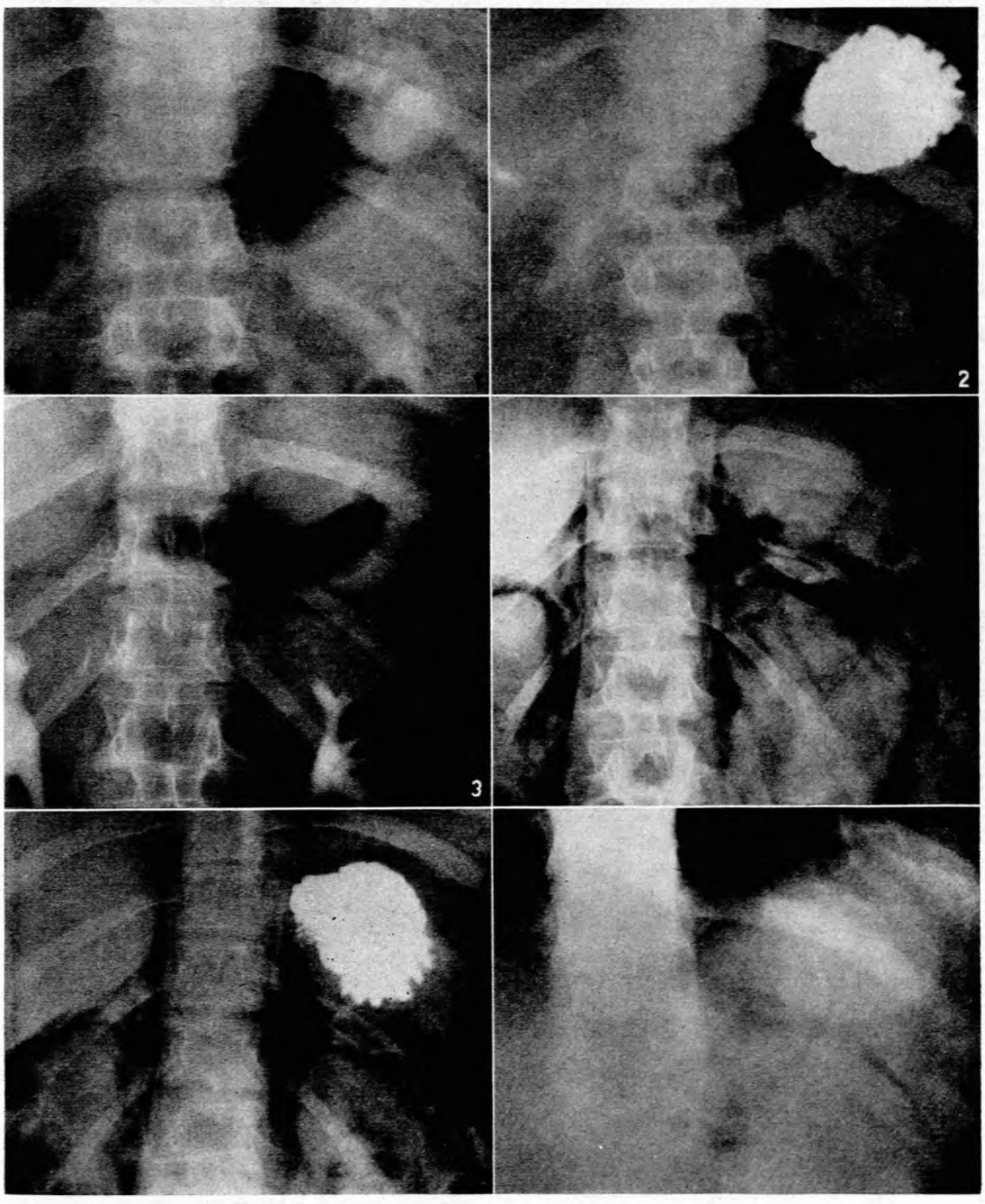
Case 2

(J.P.). Female, aged 23 years, with Cushing's disease. A rounded shadow is visible above the left kidney in the pyelogram (Fig. 3). Presacral air insufflation revealed no adrenal tumour, though bilateral adrenal hyperplasia was confirmed at operation. Note the shadow of the gastric fundus (Fig. 4) and the picture after ingestion of a small quantity of barium (Fig. 5).

Case 3

(L.W.). Male, aged 34 years. The patient was referred to a surgeon for a vague aching pain in the left renal angle. A plain radiograph of the abdomen revealed a 'mass' in the left upper quadrant (Fig. 6). The patient was a sheep farmer and a member of his family had suffered from hydatid disease. In view of this, it was considered probable that the 'mass' was a hydatid cyst. However, a laparotomy revealed no evidence of any abnormality in this region, and a subsequent radiograph showed no evidence of the oval density previously seen. The shadow is considered to be that of the gastric fundus.

Fig. 1. The rounded density of the gastric fundus is seen above the left kidney, contrasted against the air in the rest of the stomach (Case 1). *Fig. 2.* Barium in the fundus (Case 1). *Fig. 3.* Rounded shadow in left upper quadrant. Note relationship to rest of air-containing stomach (Case 2). *Fig. 4.* Same case after presacral air insufflation (Case 2). *Fig. 5.* Same case with barium in the fundus (Case 2). *Fig. 6.* Large oval opacity below left hemidiaphragm which was misinterpreted as a hydatid cyst (Case 3).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DISCUSSION

The appearance of the gastric fundus as a rounded shadow beneath the left dome of the diaphragm was described by Nathanson[1] and is discussed by Samuel,[2] who mentions that it is seen in the prone radiograph, though we have usually seen it in pyelogram films which are taken in the supine position. It occurs particularly in radiographs of hypersthenic subjects in whom the empty or slightly filled fundal loculus tends to hang downwards in the supine position. The fundus and the upper portion of the body of the stomach combine to produce this shadow.

The true nature of the 'mass' can easily be recognized by (1) its position, (2) its relationship to the rest of the stomach, which usually contains a small quantity of air, (3) its alteration in size and shape in serial films, (4) its alteration or disappearance in different radiographic positions, and (5) introduction of barium into the stomach.

SUMMARY

The empty gastric fundus sometimes produces a rounded shadow in the left upper quadrant in the plain radiograph of the abdomen.

The shadow may simulate a tumour or cyst.

The films of 3 cases are reproduced, illustrating the rounded shadow of the gastric fundus above the left kidney. Its true nature is confirmed by filling it with barium.

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REFERENCES

1. Nathanson, L. (1939): Radiology, 32, 473.
2. Samuel, E., *in* McLaren, J. W., ed. (2nd series) (1948): *Modern Trends in Diagnostic Radiology*. London: Butterworth.